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ABSTRACT

A five-year School Health Service demonstration program, sponsored by The Robert Wood Johnson Foundation, tested whether School Nurse Practitioners (SNP's) supported by community physicians could improve children's access to health care by expanding the health services in schools. The program was conducted in 18 school districts in medically underserved areas of Colorado, New York, North Dakota, and Utah. Under the Foundation's program, medically underserved children received access to care. Since the program's hours were more convenient for children whose parents work, even children with physicians used the program for supplemental care. A significant amount of untreated illness was found, and almost all of the health problems were followed up and resolved, or are still under treatment. Over the course of the program, the complexity of the care provided by the SNP's increased, which took fuller advantage of their special training and skills in diagnosis and treatment. (JD)

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Jennifer, a fourth grader in rural New York State, feels sick and visits the school health office. There a health aide takes Jennifer's temperature, which is normal, and sends her in to see the school nurse practitioner.

"What's the problem, Jennifer?" the nurse practitioner asks.

"My ear feels stuffed up," Jennifer replies.

The nurse practitioner examines Jennifer's ears and finds one eardrum is bright red and doesn't move. She notices Jennifer's nose is red and irritated.

"Have you had a runny nose, Jennifer?"

"Yes. I'm just getting over a cold."

The nurse practitioner, using protocols developed with her physician preceptor, diagnoses the problem as otitis media and prescribes an antibiotic for the infection. She tells Jennifer that otitis media is a common ear infection in children, especially when they have had a cold, and that she should try to remember not to sniffle and to blow her nose gently.

"Jennifer, I'm going to call your mom and tell her what we've found, and that I will be sending home a prescription with you. Meanwhile, why don't you lie down on the cot for a while, and I'll put a heating pad on your ear to see if that makes you feel better."

After a half-hour, Jennifer returns to her classroom.

Before Jennifer's school began its expanded school health program, a child with an earache would have been sent home. This would have posed a considerable hardship for Jennifer's mother, who works twenty miles away in a small restaurant and loses income when she must take off work. When Jennifer was younger, her mother had not known what to do for her frequent earaches, and as a result of untreated infections, Jennifer has lost some of her hearing. After several conferences with Jennifer and her mother, the nurse practitioner believes the family is now better equipped to deal with common child health problems.

John is a high school senior in a sparsely populated Colorado county. His father has been unemployed several times in the past few years and now works part-time for a service station. This job does not provide the family with any health insurance. Through the school's nurse practitioner program, John received the physical examinations he needed in order to play on the school basketball team.

John and his family are very happy about his sports ability, because he has now been offered a basketball scholarship by a small university.

"My dad would have liked to send me to college," John explains. "It's something he never had a chance to do. But if I hadn't received the scholarship, he could never have sent me. I'll be working hard next year, but I feel the school — and my dad — are behind me 100%."

The school is also pleased that its new health program enabled John to play basketball, not only because he helped his team have several winning seasons, but also because he symbolizes how the school has been able to maintain broad participation in its sports programs.

"In a low-income area like this, the smallest hurdle — like getting a physical exam — becomes an insurmountable barrier to people," a school official says. "We are legally bound to require physicals for our athletes, and now we can meet our obligations and provide opportunities for students, too."

The school nurse practitioner in Craig, Colorado, noticed something peculiar. Several of the students she had seen recently in her office had black spots on their scalps, buried under their hair. Her curiosity aroused, she did a quick survey of the children and found that quite a few had these mysterious spots. Her textbooks offered no explanation. Her physician preceptor had no clue. She made a report to the state health department, but they had no information, either, and relayed the finding to the Federal Centers for Disease Control in Atlanta.

Finally, a reply comes back. The nurse practitioner has discovered a previously unknown condition that will be called "Craig Syndrome." For now, its cause — and whether it is associated with the coal mining in the region — is unknown. Its clinical significance also is undetermined. "Craig Syndrome" may turn out to be harmless, or it may be an early warning of exposure to a toxic substance. New cases are still being found, and the children with "Craig Syndrome" continue to be monitored by health professionals alert to any adverse consequences.

This nurse practitioner's astute observation epitomizes the public health approach of disease surveillance. Following such epidemiologic leads has helped investigators unravel many important environmental health mysteries.

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Most U.S. Children Have a Doctor, But for Working Parents, the Convenience of School Health Services Fills a Need.

Four-state demonstration shows school nurse practitioners, supported by physicians, can diagnose and treat many health problems and improve the health of school children. Extra costs of expanded school health services can be met in various ways.

Executive Summary

School health programs, in serving children, also serve the interests of three other groups: parents, schools, and public health agencies. This indicates the diversity of activities undertaken by school nurse practitioners in a demonstration program sponsored by The Robert Wood Johnson Foundation, a private philanthropy devoted to improving health care. A five-year demonstration, the School Health Services Program was conducted in eight predominantly medically underserved locations in 18 school districts in Colorado, New York, North Dakota, and Utah. The program was designed to test whether school nurse practitioners, supported by community physicians, could improve children's access to care by expanding the health services available in schools. The program cost almost $6.5 million to conduct, administer, and evaluate and was by far the largest national effort ever undertaken to put in place comprehensive school health services and to assess their feasibility and usefulness.

School nurse practitioners differ from traditional school nurses chiefly because they are taught to diagnose and treat many complaints. Each school nurse practitioner worked with a local physician preceptor and established links with a network of community resources and children's private physicians for referral, treatment of complex cases, and follow up.

Most U.S. children have a regular source of medical care, usually a doctor. However, some children — those who live in rural areas, minorities, the poor, or those without health insurance — still have problems obtaining the health care they need. Under the Foundation's School Health Services Program:

- Medically underserved children got access to care and were proportionately greater users of program services than children who had private physicians.
- Even children with physicians used the program for supplemental care, in large part for convenience. The increasing number of working mothers and single-parent families find it difficult to obtain routine care during physicians' normal office hours.
- A significant amount of untreated illness was found, even among children with doctors. Some of these conditions were serious: curvature of the spine (scoliosis), anemia, and ear infections (otitis media), for example.
- Almost all of the health problems found — 96 percent — were followed up and resolved, or still under treatment.
- The proportion of fully immunized students was increased.
- The range of health problems addressed by the school nurse practitioners reflected local community values and concerns.
- Over the course of the program, the complexity of the care provided by the school nurse practitioners increased, which took fuller advantage of their special training and skills in diagnosis and treatment.

The program was also concerned about the cost and organizational issues that affect the replicability of this service model. Its findings reinforce or augment those of a number of other studies relating to school health:

- Some states have policies — in particular, those regulating the scope-of-practice of nurse practition-

This report was prepared using information from the school districts, states, administrators, and evaluators of the National School Health Services Program, interviews with key individuals involved in child health affairs, reports in the published literature, and other pertinent data. The three composite case examples, on the opposite page, were drawn from reports by the school nurse practitioners.

ers — that hamper the ability of these highly trained personnel to work at their full capacity. This was not a significant problem in the demonstration states, but remains a barrier in some others.

► A school health program should be part of a larger organization, whose primary mission is health, rather than education. This established health structure would provide peer review, a means for referrals, access to support services, and assistance in negotiating funding.

► When replicating the program in high schools, explicit attention must be given to addressing the sociomedical problems of adolescence — birth control and pregnancy, drug and alcohol abuse, and violence prevention, for example. Because these are sensitive community issues, parental involvement and support are crucial.

► The Foundation's program was more expensive than the usual, more limited school health program: nationally, on average, school districts spend $25 per child per year on health. The annual per capita amounts spent in the demonstration sites ranged from $43 to $82.

► New costs generated by the program also varied, depending on the school districts' previous levels of effort in health services. Districts that had a school-based health program before the demonstration had lower incremental costs and were generally better able to continue the expanded program after Foundation support ended.

► The school districts in the program that became committed to a higher level of school health services have tried — with some success — to tap diverse sources of funds to sustain, and even expand, their programs.

The most important measure of the program's success may be that communities containing more than 85 percent of the students in the program have elected to continue it in some form after the expiration of Foundation funds.

The Program

The Foundation supports the notion that every family should have a regular medical care provider they know and who knows them. This source of care should offer a comprehensive range of preventive services and coordinated medical services in response to illness, injury, and disability. When the school health program was planned, many children — especially those with the highest risk of health problems — were believed to have inadequate access to health services, particularly primary care, routine checkups, preventive services, and screening. At the same time, there was concern that too many children were being seen in hospital emergency rooms for non-emergency care, which is an expensive and inefficient way to obtain services.

The growing number of working mothers has made obtaining routine or special health services a problem for an increasing number of families. At the same time, the consolidation of schools entailed the closure of small, neighborhood schools. Both these trends mean that children and parents often are separated by significant distances during the day.

Among the new types of health practitioners that began appearing in the early 1970's was the highly trained school nurse practitioner, who greatly increased schools' ability to offer comprehensive primary care to children at a relatively affordable cost.

Finally, previous experiments in various communities around the nation indicated that schools could fulfill an expanded mission in health. For example: in Galveston, among medically disadvantaged children, 85 percent of all contacts with the health system were visits to the school health room; in a Hartford inner-city school, where nearly all students were poor and almost two-thirds lived with only one parent, every child received a dental checkup and medical screening tests in the project's first two years; in Cambridge (Massachusetts), a school-based community health program for children halved the inappropriate use of hospital emergency services and achieved near-universal immunization of the city's children; and in the Posen-Robbins school district on Chicago's south side, 81 percent of children were enrolled in a health corporation that provided comprehensive health services, screening, and emergency care.[1]

Setting Up the Program

The Foundation's School Health Services Program was intended to foster a unique type of school-based practice. These practices were to include basic and primary care, which would be available to individual children as needed. In addition, the nurse practitioners were to provide immunizations, screening, and

1. **These experiences were described** in a previous Foundation publication: *School Health Services: New Approaches, Special Report* Number One. Princeton, NJ: The Robert Wood Johnson Foundation, 1979.

other preventive measures to appropriate groups of children. Ultimately, the program had the following operational objectives:

- To increase access for children and families to primary health care,
- To achieve immunization at state-mandated rates for preventable diseases,
- To screen for health problems important to the general development and educational functioning of the child (including vision, hearing, and scoliosis), and follow these problems to resolution,
- To extend school nurse practitioners' practices in ways consistent with their training and competence, and
- To provide a school-based ambulatory care program that was cost-effective and supportable after Foundation funding was completed.

The Foundation announced the demonstration in 1977, with all 50 states eligible to apply. Applicants had to agree to train and employ nurse practitioners in two or more schools serving more than 3,000 children. Proposals were received from 30 states, and nine finalists were visited by a review panel of Foundation staff and consultants. In mid-1978 the Foundation awarded five-year grants of up to $1.2 million each to Colorado, New York, North Dakota, and Utah. These states in turn chose a total of 18 local school districts to participate. The sites selected represent a diversity of communities, problems in access to care, and student populations.[2]

To assess the effectiveness of the demonstration, the Foundation commissioned an independent evaluation by the University of California at Los Angeles, Institute for Social Science Research, under the leadership of Howard Freeman and Robert Meeker.[3] The UCLA group tracked student records and school nurse practitioner activities in 12 schools, believed to be representative of the 18 demonstration school districts and containing about one-third the total number of students. The evaluation did not assess programs in comparison schools served by traditional school nurses nor analyze service patterns in the demonstration schools before and after the program. Thus, the evaluation results are only descrip-

For most of its duration, the program was directed by Catherine DeAngelis, a pediatrician and nurse, who directs the Division of General Pediatrics and Adolescent Medicine at The Johns Hopkins Hospital, Baltimore.

Risks to Children's Health Have Changed

Children in the United States are remarkably healthy. Medical, social, and economic progress have all contributed to a substantial decline in risks to children's health. These gains have been made largely through a highly successful assault on the infectious diseases that formerly were the leading causes of childhood illness, disability, and death.

Paralleling and supporting medical progress since 1900 were improvements in the environment — sanitation, housing, drinking water — improvements in nutrition and product safety, and for most American families, markedly increased real incomes. Simultaneously, higher family incomes, the advent of various federal and state child health programs, and an increase in physicians and other health services have improved children's access to care.

Despite the positive impact on health of these important trends, there remain several rationales for school districts to become involved in expanded health services programs. The Foundation's program concentrated on only the first of these:

- **The improvements in health and access to medical care that are enjoyed by most American children are not yet enjoyed by all. Those from families who are minority, poor, uneducated, or living in remote rural areas or urban ghettos — these children lag behind the rest for many measures of health. These are also the children most likely not to have a regular source of care. (Figure, page 7)**
- **New, more subtle, and perhaps more intractable, child and adolescent health problems have emerged — deficits in physical capacity, learning ability, or emotional development. Many of these problems could be prevented and many more of them remedied. Despite great concern about behavioral and developmental problems, many parents are reluctant to discuss such matters with pediatricians.[4] The schools, rather than the health care sector, find themselves the social agencies that must cope with these problems.**

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2. **The director of the School Health Services Program** during its planning and early implementation was Kenneth Johnson, then a Professor of Community Medicine at Mt Sinai School of Medicine, New York.

3. **Findings from the evaluation** presented in this Report are drawn primarily from the following article: Meeker RJ, *et al.* "An Evaluation-driven School Health Initiative." September 1984, unpublished.

tive and suggestive — not conclusive — about the effectiveness of the expanded services provided by the school nurse practitioners.

The Participating Sites

Colorado

Adams County School District No. 14 (Commerce City) - Commerce City is a sprawling, sparsely populated industrial suburb, crisscrossed by several major highways and adjacent to Denver's Stapleton Airport. It has a total population of about 25,000 in a 50-square-mile area, mostly low-income people, with a high proportion of single-parent families and adults without a high school education. School district personnel estimated that because of a shortage of local doctors, about 30 percent of the population used the hospital emergency room as the principal source of medical care. The nearest facility offering primary care, Colorado General Hospital in Denver, is 40 minutes away by public transportation. Sixty percent of the children in the school district are poor enough to be eligible for free or discount-priced school lunches. The schools serve as community centers and, since the demonstration began, sponsors of a private, nonprofit Community Health Services Corporation.

Moffat County School District RE-1 (Craig) - Moffat County is a small coal mining area on the western slope of the Rocky Mountains. Its population quadrupled in the 1970's as the result of the coal boom, from about 4,000 to 16,000 people, but the supply of physicians did not keep up with this growth, and many transient families, in particular, did not have adequate medical care.

Weld County School District No. 6 (Greeley) - Greeley is a predominantly middle-class agricultural center and college town (University of Northern Colorado) in the northeastern part of the state. In contrast to the other demonstration sites, it had an adequate number of physicians and other health facilities.

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► At least 4.3 million American public school children are enrolled in special education programs serving mentally retarded or emotionally disturbed children, children with vision, hearing, orthopedic, or multiple handicaps, and children with chronic illnesses and specific learning disabilities. A 1975 federal law (P.L. 94-142) requires that states make available a "free appropriate public education" to all handicapped children ages 3 to 21, regardless of the severity of their disabilities or their families' ability to pay for services. At the local level, schools must offer individualized instruction and related supporting services — including health services.[3]

► Risky behavior is a hallmark of adolescence, but it exacts a heavy toll — 70 percent of all deaths among adolescents 12 to 17 are from injuries and violence — and all of these deaths are at least theoretically preventable. Because of high U.S. rates of fatal auto injuries and violence, death rates for American teenagers are half again those of their contemporaries in other industrialized nations.[4]

► Nearly one-quarter of teenage girls have sexual relations before age 15. Yet, teenagers usually delay a year after first having intercourse before seeking contraceptive services.[5]

► Teenage pregnancies are increasing, with 1.1 million in 1981. That year, nearly 10,000 babies were born to girls 14 and younger. One study has predicted that "If patterns do not change, four in ten young women will get pregnant at least once while still in their teens."[6]

► Fewer high school seniors report themselves as "frequent users" of marijuana, tobacco, or alcohol than a few years ago, but drug use among U.S. youth is still "the highest in the Western industrialized world"[7]; almost one adolescent in five has an acute drinking-related problem, including driving while intoxicated; and one high school senior in eight smokes at least a half-pack of cigarettes daily. These habits have life-long

4. For example: Hickson GB, Altemeier WA and O'Connor S. "Concerns of Mothers Seeking Care in Private Pediatric Offices: Opportunities for Expanding Services." *Pediatrics* 72 (November):619-624, 1983; and McCune YD, Richardson MM and Powell JA. "Psychosocial Health Issues in Pediatric Practices: Parents' Knowledge and Concerns." *Pediatrics* 74 (August):183-190, 1984.

5. The Foundation has supported two other efforts specifically to help school nurses meet the needs of handicapped children: the National Association of School Nurses conducted a series of seminars nationwide to improve school nurses' skills in assessing children's health and development; and the Pennsylvania Department of Health used a Foundation grant to train 114 school nurses as nurse practitioners, one-third of whom were to work with disabled children.

New York

Delaware-Chenango Counties – Delaware and Chenango Counties are in the rural, Appalachian region of New York State's southern tier. Some families live as far as 20 miles from their children's school or the nearest physician or hospital. Under the auspices of the local Board of Cooperative Education Services (BOCES), four school districts participated in the demonstration: Bainbridge-Guilford, Afton, New Berlin, and Harpursville. Two special education centers were also served by the school nurse practitioners. As in Adams County, Colorado, the schools perform many community functions in an effort to compensate for a lack of other public or private facilities.

Newburgh School District – Newburgh is an economically depressed city on the Hudson River, about 60 miles north of New York City, with a high concentration of low-income and minority children. District officials estimated that 60 percent of Newburgh's inner-city children did not have a regular pediatrician. Court-ordered school busing began about the same time as the demonstration, and shifting school boundaries altered student enrollments and patterns of access to care for inner-city children.

North Dakota

Kidder County – Kidder County has a small, declining, and aging population, with twice as much poverty as North Dakota as a whole. Its 3,809 people occupy 1,357 square miles in the south-central part of the state. Residents of some remote sections of the county are 60 miles from the nearest doctor. Before 1982 there was no public health program in Kidder County, and before 1979, when a Bismarck clinic opened a satellite in the county's principal town, there were no health resources at all. The demonstration therefore supplied the county's first health practitioners.

Rolette County – Rolette County is one of North Dakota's smallest — 912 square miles. It is located in the north-central part of the state, bordering Mani-

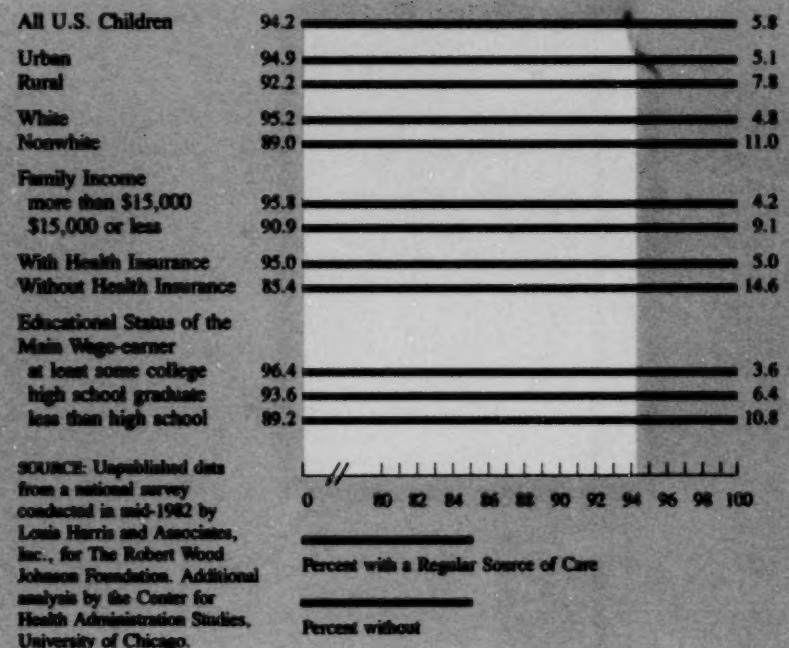
adverse consequences for health.

Social and economic changes affect not only child health, but also child health care. Several of these trends also might influence school districts' interest in embarking on an expanded school health services program.

Working mothers find it difficult to obtain health care for their children during the day. In 1983, 59 percent of children ages 6 to 17 had mothers in the work force, up from 42 percent just a decade earlier.

Nearly 13 million U.S. children — one child in five — live with their mother only. In these families, it is not just the lack of a father, but the lack of a father's income that creates barriers to health care. In 1983, the median family income in two-parent families with children was $27,286; in one-parent families, it was $11,789. This income level is only slightly over the 1983 poverty threshold for a family of four, $10,178. Nearly half of all black families are headed by women, and, at any one time, nearly half of black children are living in poverty. ■

Characteristics of Children under 17 with and without a Regular Source of Health Care



SOURCE: Unpublished data from a national survey conducted in mid-1982 by Louis Harris and Associates, Inc., for The Robert Wood Johnson Foundation. Additional analysis by the Center for Health Administration Studies, University of Chicago.

6. **Trunkey DD.** "**Trauma.**" *Scientific American 249* (August):28-35, 1983.

7. **Zelnik M and Shah FK.** "First Intercourse Among Young Americans." *Family Planning Perspectives 15* (March/April): 64-70, 1983; and Zelnik M, Koenig MA and Kim YJ. "Sources of Prescription Contraceptives and Subsequent Pregnancy Among Young Women." *Family Planning Perspectives 16* (January/February):6-13, 1984.

8. *Teenage Pregnancy: The Problem That Hasn't Gone Away.* New York: The Alan Guttmacher Institute, 1981.

9. **U.S. Department of Health and Human Services,** National Center for Health Statistics. *Health: United States, 1983.* DHHS Pub. No. (PHS) 84-1232. Washington: U.S. Government Printing Office, December 1983.

toba, Canada, and it contains the Turtle Mountain Indian Reservation of Chippewas. Its overall 1979 poverty rate (30.2 percent) was almost two-and-a-half times the statewide rate. The demonstration operated in both Reservation and non-Reservation school districts.

Utah

Tooele County - Tooele County is Utah's second largest, and it's 10,000 square miles are larger than Massachusetts and Rhode Island combined. About 90 percent of the county's 25,000 population lives in or near the town of Tooele, 30 miles west of Salt Lake City. It had seven physicians, six of whom worked in the Tooele Family Practice Group, which provided preceptors for the school nurse practitioners.

Dr. Maxcy Smith, preceptor, Newburgh, New York: "School nurse practitioners are child advocates. Often nobody else — including the parents — speaks for the kids. The nurse practitioners are the first point of entry into many serious family emotional and physical health problems."

School Health in America

The first school nurse service in the United States was established in New York City in 1902 by a social reformer and nurse, Lillian Wald. School medical inspections up to that time were aimed solely at excluding children with contagious diseases from the classroom, with no effort to assure treatment or to follow up cases.

School health services are a relatively minor item in public elementary and secondary education budgets: nationally, out of a total of more than $102 billion spent for public schools, about $1 billion is spent for health, or just under $25 per child per year. In a 1979 survey of 1,000 school superintendents, 70 percent recommended that school health services be expanded.[10]

State requirements and definitions of school health programs vary widely. A 1981 survey found that 42 states required instruction about health in the school curriculum, but only 13 required a health room or clinic in each school.[11] All states required certain immunizations before children entered school, 16 required physical examinations, 16 required vision tests, and 17 required hearing tests. In 37 states, school nurses had to meet some type of requirement beyond being a registered nurse. The responsible state agency for school health services was the state education department in 23 states, the health department in 17 states, and the education and health departments had joint responsibility in one state. In six states there was no responsible state agency, and three states did not specify. ■

The Program in Operation

The states and school districts in the School Health Services Program had available to them the resources of the national program office, its director, Catherine DeAngelis, and its nursing director, Dorothy Oda. This office provided oversight for the projects to help assure that they were operating smoothly and as intended. In this role, the national office used evaluation data collected by the UCLA researchers. Moreover, Dr. DeAngelis and her staff consulted during site visits and annual meetings and informally with the school nurse practitioners — reinforcing their professional identity and assisting with problems that arose at the local or state level.

The school districts differed from each other in the kinds of school health programs they operated prior to the demonstration. The three Colorado sites had employed traditional school nurses. Programs in New York State had been staffed by school nurse-teachers, overseen by part-time school physicians. Except for the Turtle Mountain Indian Reservation, which had a practical nurse as part of its Indian Health Service programs, the North Dakota school districts had no school health services. The Tooele County school district had no school nurses, but the county health department had conducted mandatory screenings and basic health services under contract with the school board.

Under the demonstration, each state and school district had the flexibility to structure and operate its program to suit local needs and to conform with state and local laws. Common organizational elements across sites were that the program was headed by a school nurse practitioner, there was a community physician acting as preceptor, and a health aide was assigned to handle routine and clerical duties.[12] In some sites, the school nurse practitioner served more than one school. On average, in the demonstration schools, there was one school nurse practitioner for every 1,000 students.

As a first step, registered nurses or nurse practitioners were selected by state and local program officials to receive any necessary training as school nurse practitioners at a medical or nursing school. In three of the school districts, most of the nurses chosen were already employed as school nurses and received leaves of absence to participate in the train-

10. **Goodwin LD and Igoe JB.** *Survey of School Administrators' Views of School Health Services.* School Nurse Practitioner Program, University of Colorado, Boulder, 1979. Cited in "Changing Patterns in School Health and School Nursing." *Nursing Outlook*, pp. 486-492, August 1980.

11. **American School Health Association.** *School Health in America: A Survey of State School Health Programs*, 3d ed. Kent, OH: ASHA, 1981.

12. **Evaluation of a previous Foundation** school health services demonstration, conducted in Galveston, Texas, showed that the addition of full-time aides enabled nurse practitioners to increase their time spent on problem-oriented assessments by 154 percent and on individual counseling and teaching by 74 percent.

13. **Fine LL and Bellaire JM.** "An Obsolete Professional Revisited." *Pediatric Nursing*, pp. 25-29, January/February 1975; and Nader PR, *et al.* "The High School Nurse Practitioner." *Journal of School Health*, pp. 649-654, January 1978.

ing. The school nurse practitioners began practicing in Colorado, New York, and Utah in the fall of 1979 and in North Dakota in early 1980.

The Services Provided

The school nurse practitioners and health aides provided five categories of services:

- *Basic care:* Care for minor complaints that warrant neither follow-up nor entry in health records. Much of this type of care is ordinarily handled outside school hours by parents on their own or with telephone advice from a physician.
- *Primary care:* Visits for acute or chronic problems, such as earaches and strep throat, that require follow-up and recording in student health records.[14]
- *Physical examinations:* Comprehensive health assessments of the sort required by the federal Early and Periodic Screening, Diagnosis, and Treatment program for Medicaid children or required for participation in sports.
- *Screening:* Testing for vision, hearing, scoliosis, and other conditions, typically administered to groups of children of specific age or grade levels.
- *Immunizations:* Checking student records to identify gaps in immunizations and performing required inoculations.[15]

Basic care and screening — among the traditional school nurse functions — accounted for about 80 percent of the total number of services rendered. However, these services require comparatively little

Dr. Donald Cook is past president of the Greeley, Colorado, School Board, a preceptor in the Foundation's school health services program, and served as chairman of the American Academy of Pediatrics School Health Committee. Cook believes the training and upgrading of school nurses to become school nurse practitioners "continues to pay dividends" because the practitioners are capable of "more counseling, more diagnostic work, and are overall giving us greater value for the dollars spent on school health services. The school referrals to physicians are more appropriate than before, and the expanded role helps immeasurably with our responsibilities for handicapped children."

Dr. David Roos, former preceptor of the school health services program in Commerce City, Colorado, found the program "a great model for underserved areas that have a problem attracting primary care physicians to private practice."

The School Nurse Practitioner

The American Nurses' Association estimates that there were about 1,000 school nurse practitioners among the nearly 45,000 registered nurses working in schools in 1980 — the latest year for which figures are available — about 2 percent of the total number of school nurses.

The principal differences between a school nurse practitioner and a school nurse are that the practitioner can — under the supervision of a preceptor physician — diagnose and treat a broad range of illnesses, following established protocols (including the writing of prescriptions), and conduct thorough health assessments. Studies in the mid-1970's comparing school nurse practitioners with school nurses found that practitioners spent twice as much time as nurses in direct patient care, had three times the number of daily contacts with parents to discuss emotional, physical, or learning disorders, dismissed about one-half as many pupils from school (because they could diagnose and manage common health problems in school), and were less likely to refer pupils to physicians unnecessarily. In Galveston, after the high school nurse was trained as a practitioner, more than twice as many serious health problems were identified.[13]

Such experiences have helped convince the National Association of School Nurses that school nurse practitioners "will improve the quality and quantity of pediatric services in the school and community."[16]

By contrast, physicians are cautious in accepting nurses in this expanded role. In a 1980 policy statement, the American Academy of Pediatrics Committee on School Health expressed reservations about the appropriateness of providing primary health care by school nurse practitioners.[17] The committee believes that each child should have a "medical home" for all preventive and primary care, available year-round, 24 hours a day,[18] and said that school nurse practitioner care "is acceptable only when such a 'home' is not available elsewhere." The Academy Committee recognized that some school nurse practitioner programs provide "health care to some children who previously were not receiving adequate services," improve immunization coverage, and decrease use of emergency rooms, but said that "more research and evaluation must occur before the final value of school nurse practitioners and their role in the delivery of primary health care are established." Finally, the Academy Committee supported school nurse practitioners' participation in school health programs "only when they function under the direct supervision of a physician." As of early 1985, revisions in this 1980 policy statement were under consideration within the Academy. ■

14. **The site with an adequate supply** of physicians, Greeley, did not have a primary care component in its program, instead emphasizing health assessments and mandated services for the handicapped.

15. **This activity is particularly** important because, with the decline in incidence of the diseases now prevented by immunizations, there is the danger that parental complacency will result in lowered immunization rates and a resurgence of preventable diseases.

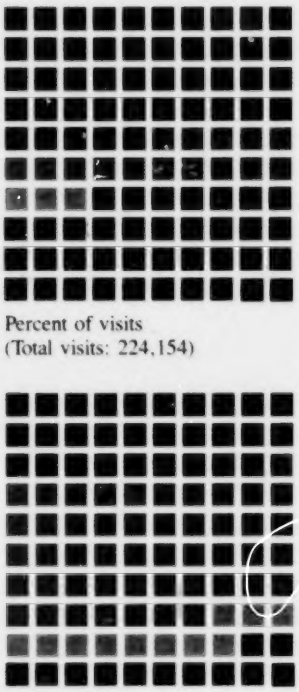
16. **National Association of School Nurses, Inc.** *Resolutions and Policy Statements*, 1982 and 1983. Englewood, CO: National Association of School Nurses, Inc., n.d.

17. **American Academy of Pediatrics,** Committee on School Health, Donald E. Cook, Chairman. "School Nurse Practitioner." *Pediatrics* 65 (March): 665-666, 1980.

18. **Typically, the school districts** participating in the Foundation's program provided at least some health services over vacation periods, and one maintained all services 24 hours a day, year-round.

Figure

Effort Expended in Various Service Categories, School Health Services Program, 1980-1982



Percent of visits
(Total visits: 224,154)

Percent of effort (estimated)

- Basic Care
- Primary Care
- Physical Examinations
- Screening
- Immunizations

Each box represents one percent. The lower chart shows that different service categories require different amounts of effort.

SOURCE: Meeker RJ, *et al.* "Saving School Health: A Radical Proposal." November 1983, unpublished.

effort. Almost half the actual staff time and effort went to primary care, only 29 percent to basic care, and 11 percent to screening (Figure). Two-thirds of the practitioners' time was spent providing primary care, with most of the remaining given to physical examinations. The traditional activities of screening and basic care were discharged primarily by health aides.

Formal health education was not a major activity of the school nurse practitioners, except in Craig, which participated in the national School Health Curriculum Project. In the other sites, health education occurred chiefly one-on-one — as a part of regular assessments or treatment of complaints, and when school nurse practitioners informed children or their families about health maintenance.

Nearly 80 percent of the problems handled by the school health teams were diagnosed during primary care visits, with the balance found about equally through physical examinations and screening (Table). The most common diagnoses — respiratory illnesses — accounted for 16 percent of the problems, and the five most common categories combined accounted for almost half the total care given. The evaluators found that the school nurse practitioners' activities — primary care, physical examinations, and screening — were not redundant, in that each uncovered different kinds of problems and, therefore, all were necessary. For example, hearing problems were more likely to be picked up in a primary care examination, whereas vision problems were more likely to be detected by screening.

Relations with Physicians

The school nurse practitioners conducted their practices using protocols established with their physician preceptors that set forth procedures and criteria for diagnosis and treatment. Relationships between school nurse practitioners and physicians varied. Generally, the school nurse practitioners had wide latitude to diagnose and treat minor illnesses and make referrals. They conferred by telephone with the physician preceptors and arranged for them to see children when necessary. The physicians held training sessions for the practitioners and examined selected health records to evaluate the practitioners' care. The value of the physician preceptors in developing and legitimating many of these programs cannot be overestimated.

In some sites, where students received primary care from the nurse practitioners only at the option of the parents, nonparticipants were referred for treatment to their private physicians. Many children who received primary care in the school program also maintained regular contact with their family doctors, and the school nurse practitioners consulted with them regarding treatment and follow-up, as did preceptor physicians, when appropriate.

Implementation Problems

State Administration – The Foundation's program worked through the state agency with responsibility for school health. In two states the grantees were departments of health and in two states, departments of education.

Relationships among the relevant state and local agencies were sometimes awkward. For example, the North Dakota project, administered initially by the state health department, did not involve the State Department of Public Instruction. Similarly, North Dakota designated the Division of Maternal and Child Health as the responsible administrative entity and excluded the Division of Community Health Nursing, which operates the state public health nursing program. Officials believe that its inclusion from the outset could have helped build greater community acceptance of expanded school health services. In Utah, responsibility for the demonstration was divided between the state education and health agencies, with the project director employed by the education department and the school nurse practitioners by the health department.

Inter-agency cooperation at the state level was effective in New York and Colorado. The lead agency in New York was the education department, which secured the cooperation of the departments of health and social services. In Colorado, the health department had primary responsibility and the education department furnished a health education specialist to work with the project.

Building without a Base – Utah and North Dakota did not have school-based health programs prior to the demonstration (except for the Turtle Mountain Indian Reservation). Officials in both states now question starting a program with such highly trained personnel and with as high a practitioner:student ratio as the demonstration used. By contrast, in New York and Colorado, where the program took better hold, the demonstration represented an upgrading of services already in place.

Authority to Practice – A 1979 survey commissioned by The Robert Wood Johnson Foundation found that laws in 45 states contained authorization for nursing "in the expanded role."[19] New York State enacted a special statute authorizing nurses to diagnose, treat, and prescribe under established protocols. The law covered the demonstration period and subsequently has been extended.

19. **Kohn MA.** *School Health Services and Nurse Practitioners: A Survey of State Laws.* Washington: The Center for Law and Social Policy, April 1979.

In 1982, North Dakota's State Board of Medical Examiners informally questioned the authority of school nurse practitioners to operate at remote locations (up to 40 miles from their preceptor physicians) in northern Kidder County. After the preceptors explained the program, the Board dropped the matter, concluding that the program was operating under the jurisdiction of a governmental body — a school district — and thus outside its authority.

Community Attitudes – The importance of community support was demonstrated by the experience of the Utah project. A small group of Tooele County parents believed that the project was undermining parental responsibility, especially for sex education, that the evaluation questionnaires were intrusive, and that the project was a forerunner of "socialized medicine," imposed by outsiders. Local concerns coalesced around a proposal that pregnancy testing be done by the school nurse practitioners, who believed that many young women were getting inaccurate readings from over-the-counter tests. Vigorous objections to this activity were expressed by some citizens, and the outcry precipitated unfounded suspicions and rumors.

It is possible that adverse community reactions on sensitive topics can be avoided, or at least reduced, by working closely with parents. A survey of Commerce City parents revealed that 70 percent thought sex and drug education programs were very much

In the Newburgh, New York, area, physicians have contrasting views of the impact of the school health services program on their income. Said a private pediatrician: "It is definitely true that I'm losing business, because of the number of ear and throat infections treated in the schools." But, said Dr. Stanley Grossman, past president of the Orange County, New York, Medical Society: "I don't believe there has been a measurable impact on doctors' incomes."

Table

Distribution of Children's Problems by Diagnostic Category and Source of Identification, School Health Services Program, 1980-82

Type of Problem	Primary Care	Physical Exam	Screening	Total
Respiratory	6012	264	0	6276
Musculoskeletal	3196	251	1	3448
Trauma	2987	31	0	3018
Dermatological	2596	353	13	2962
Vision	417	205	2211	2833
Hearing	1698	205	623	2526
Medications	2438	8	0	2446
Miscellaneous	2187	234	2	2423
Dental	1349	592	2	1943
Gastrointestinal	1571	58	0	1629
Otitis Media	1342	84	0	1426
Eye	1066	163	0	1229
Genitourinary	804	201	0	1005
Speech, Learning, Behavior	624	245	0	869
Scoliosis	142	90	607	839
Tonsillitis	609	29	0	638
Headache	571	16	0	587
Blood Pressure, Cardiovascular	317	92	158	567
Height/Weight Checks	3	0	426	429
Heart Murmur	164	221	0	385
Obesity/Underweight	155	199	0	354
Anemia	77	105	0	182
Neurological	119	53	0	172
Allergy	128	6	0	134
Neoplasm	87	28	1	116
Total	**30,659**	**3,733**	**4,044**	**38,436**

SOURCE: Meeker RJ, *et al.* "An Evaluation-driven School Health Initiative." September 1984, unpublished.

20. These figures are based on estimates of program costs and enrollments provided by the school districts and states in the demonstration. The estimates are for a twelve-month year, and include the cost of state administration of the program. Data were unavailable for one state. Because one school district did not provide primary care, its annual per capita costs were unusually low — $33 — and it was omitted from this comparison. One district offers a comprehensive health

needed and 20 percent that they were somewhat needed. Asked whether they supported making birth control available through the School Health Corporation, a quarter of the respondents thought it was needed and should be confidential, another 50 percent thought it was good as long as parents were involved, and 25 percent thought it was a "mixed bag" — probably needed but difficult to implement. Only half this latter group (about 12 percent of parents responding) opposed it.

Role Conflicts - The school nurse practitioners in some cases encountered difficulty in interpreting their expanded role to the principals, teachers, and guidance and counseling staffs accustomed to the traditional orientation of the school nurse. Jurisdictional conflicts arose over whether school nurse practitioners or guidance counselors had primary responsibility for teenage sexuality issues, emotional problems, and alcohol and drug abuse.

Program Costs

The average nine-month (school year) salaries of core staff — a full-time school nurse practitioner, health aide, and part-time preceptor — totaled about $50,000. In the demonstration schools, on average, there was one such health team for each 1,000 students. These costs could be expected to vary in different geographic regions, reflecting local wage rates and the number of teams established for a given school population. The states and school districts in the demonstration estimate the cost of replicating or continuing their programs at between $43 and $82 per year, per child.[20]

The new costs entailed in the expanded program depended on the school's previous level of effort. The added costs in New York and Colorado were smaller than in Utah or North Dakota because the former states already employed school nurses, who in most cases were replaced by school nurse practitioners at slightly higher salaries. Given personnel costs, and after estimating costs for equipment, supplies, insurance, travel, and overhead, the UCLA evaluators estimated costs of an expanded school health program at about $80 per student per year.

Post-Demonstration Continuity

Half of the school districts in the demonstration — which contain 88 percent of the students participating — are continuing the program with other resources, now that Foundation grant funds have been spent. The districts that are proceeding include the demonstration school districts in New York and Colorado. One additional district, the Turtle Mountain Indian Reservation, intends to assume some of the extra costs after Foundation funds are depleted and to operate at a reduced level of service.

Other program spillovers have occurred. School districts adjacent to the Delaware-Chenango and Newburgh sites also have decided to expand their health services using school nurse practitioners. Utah recently created the full-time position of school health consultant in the state health department to work with local officials to upgrade school health programs. Voters in Kidder County, North Dakota, approved a new tax levy in 1982 to pay for their first public health nurse, after several previous rejections of such measures. State health officials underscore the significance of this accomplishment and believe the school health program was instrumental in gaining acceptance for public health nursing. The public health nurse is working part-time in the school, building on the base of patient contacts and records begun by the school nurse practitioner in the demonstration. Also in North Dakota, a new School Health Services Task Force, consisting of officials of the state health and education departments and others who were involved in the demonstration, now meets regularly to plan new approaches to school health services throughout the state.

Lessons from the Program

The school-based sites, as primary care providers, were well accepted and well utilized by children in the sites. Services that best used the nurse-practitioner's special skills were the ones that most increased in use as the program progressed.

Students from low-income families and those who did not have a usual source of care were more likely to use the program than were others. Most of the students (80 percent) had a regular source of care, but many of them used the program anyway. Without it, children would have been sent home more frequently. Not only would they miss classes, but — in

service for participating students for an annual fee. The director of this program estimates the annual costs per participant at $145. (If the annual per capita costs of the program in this site were calculated on total school enrollments as in the other sites, they would be $61.) The 1982-83 annual per capita costs for the remaining districts were $43, $51, $78, and $82.

About the same time the Foundation's program took place, a citizen's committee was reviewing school health in New York City. The committee estimated the total cost for an intensive school health program, including a dental hygienist, at $55 per student, per year. (Citizens' Committee for Children of New York, Inc. *Rx for School Children*. 105 East 22nd Street, New York, NY 10010, October 1983.)

families in which adults are employed — their parents also would miss work.

A substantial number of health problems were detected. The vast majority of problems identified during physical examinations — 83 percent — were previously unknown, and many were not trivial. For many types of health problems, early identification and prompt intervention improve the long-term prospects for health. Just under 96 percent of primary care problems were resolved or still under treatment at the time of reporting. The program evaluators believe this record of problem resolution "appears to be dramatically better than found in the typical school health services program." It reflects the nurse practitioners' ability to handle many problems themselves (about half were handled by the nurse practitioners alone), to make appropriate referrals to the preceptors, family physicians, and a network of community health providers, and the special emphasis given to follow-up in this program. About 7 percent of problems were not resolved within the school but were referred to the preceptors or other community physicians. The school nurse practitioners retained responsibility for coordinating and following up these referrals.

The school setting affords access to the entire school-age population and an unparalleled opportunity for monitoring, historical record-keeping, and tracking children needing services. This facilitates the provision of population-based health services like immunizations and screening. In most sites, more than 90 percent of students were fully immunized.[21] Moreover, the level of completed immunizations was 33 to 40 percent higher among students enrolled in school in September than among students entering during the school year, which demonstrates the importance of continued monitoring.

A number of lessons from the national program are germane to communities considering expanding their school health services.[22] The most important of these are discussed below under these headings: service issues, organizational issues, funding strategies, and allies.

Service Issues

Because the program was oriented around a limited set of health objectives, other possible goals for school health programs were not consistently addressed throughout the demonstration. However, just as a community wishing to replicate this program would tailor it to community needs, so the communities in the demonstration modified the Foundation's overall objectives to meet their specific situations: Commerce City provides services for handicapped children; Newburgh has added an adolescent pregnancy service; nurse practitioners in Craig help teach the school's health education curriculum; Greeley declined to offer the primary care component of the program.

One particularly important issue arises when planning expanded school health services programs for high schools. Communities must determine in advance the ways the program is to handle teenage sociomedical problems — particularly birth control and pregnancy, sexually transmitted diseases, alcohol and drug abuse, and suicide and homicide prevention. The support and active participation of parents in planning adolescent services is to be encouraged. They may be more supportive of such a program than commonly believed.

In the demonstration states, the school nurse practitioners generally had sufficient authority to provide the range of services envisioned in the national program. However, in some states, laws still restrict nurse practitioners' authority to diagnose, treat, and prescribe medicines, even under physician-approved protocols.

Organizational Issues

A number of organizational issues relating to the experience of this demonstration are germane to its replication. The demonstration showed that an expanded school health program needs something to build on. Only the school districts that had a functioning school-based health program prior to the demonstration are continuing the expanded effort. A program also must be fitted into a larger, health-oriented structure.

Putting isolated nurse practitioners into schools will not work. For backup, support, and oversight, to maintain productivity, and to give the program the clout necessary to get started and funded, school health programs need to relate to a university nursing or medical school, a large physician group practice, a hospital or other major facility, a state or local health department, or a special office of the state education agency. (Such organizations do not necessarily have a commitment to school health at present, but such a commitment might be developed within their broad health mission.) The evaluators propose, for example, the creation of a national or regional school health corporation to which local school district programs could relate. In the Foundation's program, formal linkages existed at three levels — locally, with the physician preceptor, at the state level, with the state health or education agency, and nationally, with the national program office.[23]

21. DeAngelis C, *et al.* "Achieving Optimal Immunization Levels in School-age Children." *Journal of Pediatrics 103* (November):811-814, 1983. The rates reported by the school nurse practitioners for the demonstration sites were in almost all cases considerably lower than rates reported by the state for those same sites. Also, rates achieved in the demonstration sites are lower than statewide rates reported to the U.S. Centers for Disease Control. The differences between practitioner-reported site rates and CDC-reported statewide rates suggest that the demonstration sites, despite their increased immunization coverage, still lagged behind statewide efforts. Another interpretation, according to Dr. DeAngelis, is that states do not report immunization rates accurately, especially for high school students. Evidence for this interpretation is that, to prevent recurrent measles epidemics, many colleges are considering requiring evidence of measles immunity before matriculation, which would not be necessary if high school students were indeed fully immunized.

22. A list of discussion questions, entitled "Assessing Prospects for An Expanded School Health Program in Your

The demonstration confirmed the need for coordination between health and education agencies at both the state and local levels:

> Certain problems are inherent in trying to establish priorities of one service sector in the programs and facilities of another . . . In a time of (education) budget cutting, school health services may be the first to go . . . To the extent the school hires health personnel and controls operation of the program, linkages to the public and private health sectors may prove difficult to create and sustain.[24]

For these and other reasons, the federal Select Panel for the Promotion of Child Health also concluded that while schools are appropriate sites for delivering health services to school-aged children, the services should be rendered under auspices of agencies, such as those cited earlier, whose primary mission is health.

Demonstration projects achieved a high degree of community acceptance and success where there was effective, sensitive leadership by state and local school and health officials. This is particularly important because school health services have no clear constituency. Some of the projects' activities benefit the schools, some promote community public health goals, and some aid students needing care in a particular instance (and their parents).

Funding Strategies

In the school districts continuing some form of the expanded health services program, funding remains problematic. In some of the districts, the incremental costs of the program are being met largely out of the local school budget, and there are economic advantages to certain schools that support an expanded health program, which help offset its extra costs. In places where state aid to local school districts is based on actual attendance rather than enrollment, keeping children in school can increase state aid. For example, one Delaware-Chenango area district receives almost $9.50 in state school aid for every day a child is in school. Thus, if a school nurse practitioner can manage a health problem in school and prevent two days of absence, state aid increases by $19.[25]

Diverse sources of funds are being tapped, in order to continue the expanded school health programs:

- Newburgh, New York, has obtained an annual contract — $97,000 for the 1982-83 school year — to provide screening and primary care for Medicaid-eligible children under the state's Child Health Assurance Program (New York's version of the federal Early and Periodic Screening, Diagnosis, and Treatment program).
- In 1983, Newburgh also obtained a $75,000 grant from the State Department of Social Services for an adolescent pregnancy project, renewed for the school year commencing September 1984.
- Commerce City, Colorado, created a nonprofit corporation that offers the full range of nurse practitioner services for a fixed annual fee — $35 per child, with a $100 maximum per family. These fees do not fully support the program, but are set at a level that is affordable by the low-income families in this area. By fall 1984, 700 children were enrolled.
- Commerce City's school health corporation has an annual contract ($14,500 in 1984-85) to provide physical examinations and a wellness program for school district employees. It also receives some of the county's revenue-sharing funds.
- The Craig, Colorado, school district charges $20 for each physical examination provided.
- A portion of one nurse practitioner's salary in the Delaware-Chenango area is paid by a special memorial fund.

By contrast, the school districts did not obtain any significant reimbursement for services from private insurers. This is primarily because ambulatory services — especially supervisory and preventive services for children — are not usually covered.[26] The trend toward higher insurance co-payments and

Community," is included with this *Special Report*. Extra copies are available from the Foundation.

23. The estimated cost of the School Health Corporation is $40 per student per year, which is in addition to the estimated $80 per student per year for service delivery.

24. U.S. Department of Health and Human Services, Public Health Service. *Better Health for our Children: A National Strategy.* The Report of the Select Panel for the Promotion of Child Health to the United States Congress and the Secretary of Health and Human Services, Volume I. DHHS (PHS) Pub. No. 79-55071. Washington: U.S. Government Printing Office, 1981.

25. Personal communication, Arlene Sheffield, Director, School Health Demonstration Program, New York State Education Department, March 14, 1984.

26. Austin G. "Child Health-care Financing and Competition." *New England Journal of Medicine 311* (October 25):1117-1120, 1984.

deductibles further reduces child health care coverage and simultaneously increases the out-of-pocket health costs of families. Parents may become interested in school-based health services, if they see them as a low-cost alternative to conventional child health services.

Other options for funding school health programs exist, depending on local circumstances. One is to pay for the program out of local property taxes. As an example, in Newburgh, an amount equivalent to the Foundation's support of the program could be raised by increasing the school district property tax rate from $23.29 per $1,000 of assessed valuation to $23.58 — or $14.50 per year on a $50,000 house. This is about half the cost of one physician office visit in that area.

State restrictions on the reimbursement of services provided by nurse practitioners may be at least a temporary barrier to Medicaid reimbursement. This problem was encountered in Commerce City, which lost the small amount of money it had been receiving from Medicaid, when the state ruled that nurse practitioner services could not be reimbursed except when a physician was in the building — a requirement that could not be met.

Another option would be for a school health program to negotiate to have itself designated as a "preferred provider organization" (PPO). To be a PPO, the district would arrange with some third-party payer — an insurer, an employer, a state Medicaid agency — to furnish services to a covered group of children at slightly lower than usual fees and, in return, would receive prompt payment and a greater number of patients. Although parents would be free to seek care for their children through the PPO or any other health care provider, they would be offered certain financial incentives to use the "preferred" provider. A school district in which many parents are employed by only a few firms might attempt to establish such an arrangement with these companies. Commerce City is attempting to negotiate a program of this general type with the state Medicaid agency.

The school health services program can charge for certain services — or contract out its services for specific programs — school district employee health services or services for handicapped children.

By working with the local health department, districts may be able to be paid for providing certain services under various federal child health programs, for example: the block grants for Maternal and Child Health Services, Alcohol, Drug Abuse, and Mental Health Services, Primary Care, and Preventive Health and Health Services; or WIC (the Special Supplemental Food Program for Women, Infants, and Children, which includes a health services component).

Certain services may be funded by public or private grants. At least one school district in the demonstration has sought funding from the United Way as a nonprofit community service agency.

Allies

An important potential source of support for an expanded school health program lies within the local health and medical establishment. Not only may these individuals and institutions provide preceptors, peer review, and a referral network, but they can also serve a larger role in legitimating the program. Alliances with state health and education agencies may facilitate program funding.

The nurse practitioners in the demonstration sites experienced very little opposition from the medical communities where they served — in part because the sites selected were primarily those where medical services were deemed inadequate. Under different circumstances — and as the number of pediatricians entering practice increases — physicians may not welcome competition from school-based health services.[27]

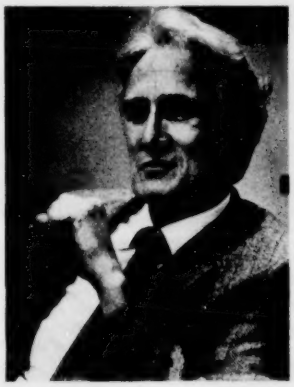
School boards and superintendents with broad views of the schools' community responsibilities are more likely to support an expanded health services program than are those who believe the schools have a narrow educational role.

In the states in which the program is continuing, the school nurse practitioners are employees of the local school districts rather than state employees assigned to work in the demonstration schools. Thus, they had an understanding of local values and problems and were better able to exert leadership and gain crucial local support. Regardless of the employing agency, the school nurse practitioners were the most important figures in the demonstration. They made an impact in all locations and usually managed to impress students, parents, teachers, administrators, and physicians alike with their skills and their concern for the health of children and the well-being of families.

The National Policy Context

Momentarily leaving aside the issues facing school districts attempting to replicate the school health services demonstration, does the expansion of this kind of service make sense from a broader policy perspective? Two principal themes characterize national health policy debates of the last two decades: a concern for improving access to care and a

According to Don Beren, president of the Commerce City, Colorado, School Board, "The schools are a community resource. We should get into health, recreation, and economic development. The schools are our only focal point in the community."



An even stronger rationale for school health is provided by Freeman Van Wickler, superintendent of the Delaware-Chenango area Board of Cooperative Education Services: "Kids can learn better when they get the right health care."

27. **Some physicians appear to have realized** an increase in patients because of the program, according to the school nurse practitioners. This is because of increased referrals resulting from higher levels of assessment and diagnosis by the school nurse practitioners. The school nurse practitioners believe that specialists and not general practitioners are the main beneficiaries of increased referrals.

sometimes conflicting concern about increases in health care costs.

Since most U.S. children have a regular source of medical care, are expanded school health services necessary to ensure access to care? This demonstration was based on the premise that there are residual groups of children who still lack access and that even for children with private physicians, the program could provide supplemental care. Data from the program evaluation support this view.

Would expanded school health services contribute to higher national health costs? The answer is probably yes. (The cost of health care of all types — physicians' and dentists' services, hospitalizations, public health programs, and the like — was an estimated $466 per child in 1983.[28] Annual expenses in this program ranged from $43 to $82 per child.) It is difficult to sort out the effects of expanded school health programs on overall health spending: on one hand, such programs could save money by reducing the number of physician visits for routine care, by reducing emergency room visits, by preventing certain health problems, and by identifying disorders at an early stage, when treatment may be less costly and more effective; on the other hand, the expanded programs would increase costs by providing more services and by identifying and initiating care for previously undiagnosed problems, including referrals to other providers of care.

The access-versus-costs equation is complex and, for school health, has not been addressed at the national level. States and local school districts are left with the decision of whether to proceed, and their decisions are more likely to be based on concerns for child health and state and district budgets than on concerns about effects on national health expenditures.

Additional Reading

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28. This estimate was based on 1978 data, adjusted for inflation using annual changes in the Consumer Price Index for medical care items. The source of the 1978 figure is: Fisher CR. "Differences by Age Groups in Health Care Spending." *Health Care Financing Review*, pp. 65-90, Spring 1980.

The
Robert Wood Johnson
Foundation

Assessing Prospects for An Expanded School Health Program in Your Community

Many people in a community — parents, school officials, health professionals, and others — may be concerned about improving school health services. But they may not know where to begin. The following list of questions is one place to start, and the list may be used in conjunction with the Foundation's *Special Report* on the National School Health Services Program.

These questions are not the kind that you can expect to answer off the top of your head; instead, these questions are meant to prompt discussion. You might begin such discussions among your neighbors, at parent-teacher meetings, in community groups, with elected officials, or at public meetings. The list starts with questions about whether your community actually needs to expand school health services. The rest of the list asks questions about your community's health resources and attitudes that help determine whether a program will succeed.

What are your community's needs?

► Are there children in your community who need regular health care and aren't getting it?

► For some families, would expanded school health services greatly improve the convenience and accessibility of health care — preventing both lost schooldays and lost workdays?

► Are there some specific health needs of school children that are not being adequately met? Examples would include: low immunization rates; children with untreated hearing, speech, or vision problems; unacceptable rates of teenage pregnancy, substance abuse, or mental health problems; handicapped children needing better medical evaluation and supervision; a demand for more sophisticated sports medicine and more comprehensive physical examinations; or children with poor nutrition or poor dental health.

What are your community's resources and capabilities?

► Is there an existing school health program that could be upgraded — building on services already in place for first aid, screening, guidance counseling, or the handicapped?

► Are your local and state health and education departments interested in helping? Are local community health facilities willing to cooperate?

► Are strong potential leaders for the program available within your community, including nurses who are (or could be) trained to work as school nurse practitioners?*

*Nurse practitioners have received extra training that qualifies them to diagnose and treat a broad range of health problems, with physician back-up and using protocols established with physicians. In some states, they may prescribe medications according to written protocols.

► Are local pediatricians or other qualified physicians willing to act as preceptors for school nurse practitioners?

► Do state laws permit school nurse practitioners to diagnose, treat, and prescribe under a physician preceptor's guidance?

► What sources of funds are realistic for such a program in your community? Examples are: monies from the local school budget, fees that could be charged for certain services (such as physical exams), monies from state and local public health and handicapped children's programs, Medicaid, and funds from education and social service programs.

What are your community's attitudes toward expanded school health services?

► Would parents, teachers, and school administrators support the expanded program?

► Would leading physicians and other providers of child health care support the program and serve as consultants to it?

► Would community leaders and parents support the program's involvement in adolescent problems?

► Does your community have any advocacy groups for health, children, or schools, whose aid could be enlisted?

Two Tools to Get Started

The resources of a number of organizations are available to community groups interested in expanding school health. The types of assistance available from two such organizations are described briefly here.

An organization called Healthy Children helps communities develop health care services for children in need. The Healthy Children program provides information and expert consultants who have developed and operated successful programs in communities around the country. These experts are particularly knowledgeable about school health programs. Healthy Children is conducted under the auspices of the Harvard University School of Medicine and is supported by The Robert Wood Johnson Foundation. For more information, write: Philip J. Porter, MD, Healthy Children, 641 Huntington Avenue, Boston, MA 02115.

The American School Health Association has developed a school health marketing kit that includes guidelines for program planning, ideas for community programs to generate support for school health, and tips for working with local news and information media. The kit can be ordered through the American School Health Association, P.O. Box 708, Kent, OH 44240. The charge for the kit is $6.00.

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